The Indigenous Knowledge Management Project

Jane Hunter
DSTC Pty Ltd
jane@dstc.edu.au

Overview

- Project Goals
- Related Work
- Unique Requirements
- Solutions
- Prototype
- Applications
- Future Work

Indigenous Knowledge Management Project Goals

Developing IT tools to enable:
- Digital repatriation of indigenous knowledge;
- Traditional owners to define ownership, dissemination, access and copyright permissions;
- Support for customary laws and protocols;
- Enforcement of access and usage constraints;
- Protection against misappropriation;
- Proper attribution, compensation to traditional owners;
- Preservation of indigenous knowledge, cultures, history.

MPEG-21

- Multimedia Framework to enable transparent use of multimedia resources across a wide range of networks and devices
- Integration of standards for
  - content management
  - rights management
  - e-commerce
- Getting consumers to pay for multimedia delivery

MPEG-21 Results

- ISO/IEC 21000 (March 2001)
  - Part 1: Vision, Technologies and Strategy
  - Part 2: Digital Item Declaration
  - Part 3: Digital Item Identification and Description
  - Part 4: IPMP
  - Part 5: Rights Expression Language
  - Part 6: Rights Data Dictionary
  - Part 7: Digital Item Adaptation
Example

- Video - “Stories from Dreamtime”
- Owner – Jagara Community Council
- Cost per homeview = $5
- Pay to Account Id = 112234479

XrML Encoding

```xml
<WORK>
  <OBJECT type="video">
    <ID type="DOI">345.6789</ID>
    <NAME>Stories from Dreamtime</NAME>
  </OBJECT>
  <OWNER>
    <OBJECT type="Organisation">
      <NAME>Jagara Council</NAME>
      <ADDRESS>PO Box 2189, Brisbane, Qld 4101</ADDRESS>
      <PHONE>(617) 3844 5413</PHONE>
    </OBJECT>
  </OWNER>
  <OWNER>
    <RIGHTSGROUP name="HomeViewer">
      <RIGHTSLIST>
        <PAY><FEE><MONETARY>
          <PERUSE value="5" iso-code="AUD"></PERUSE></FEE></PAY>
          <ACCOUNT id="1122344"></ACCOUNT>
        </RIGHTSLIST>
      </RIGHTSGROUP>
    </DOCTYPE>
  </WORK>
```

Problems

MPEG-21, XrML:
- No underlying data model;
- Poor interoperability;
- Based on modern copyright laws;
- No support for customary laws;
- Patents.

Underlying Metadata Model

```
```

Merged Class Hierarchy

```
```

Merged Property Hierarchy

```
```
Indigenous Knowledge

- Ownership and authorship – communal
- Originality – evolve over time
- Material form – oral or visual
- Duration – perpetuity
- Derivative works – allows exploitation
- Customary laws – not recognized

Customary Laws

- Highly variable
- How to translate to digital domain?
- Dynamic – social and environmental influences
- Laws themselves are secret
- Commonalities?

Access Restrictions

- Depend on the user’s:
  - membership of a particular clan or tribe;
  - status within the tribe (uninitiated, initiate, elder);
  - role within the tribe (midwife, hunter, dancer);
  - gender;
  - relationship to people, animals, places or objects depicted in the resource.
- the death of people recorded in a resource;
- the context in which the resource will be reused or reproduced.

`customary` constraint

```xml
<element name="customary">
  <complexType>
    <attribute name="test" type="string"/>
    <attribute name="request" type="string"/>
    <attribute name="warning" type="string"/>
  </complexType>
</element>
```

Example test constraint 1

```xml
<permission>
  <copy>
    <constraint>
      <customary test="(user/tribalUnit@type=='clan') && (user/tribalUnit/name=='Nunukal')"/>
    </constraint>
  </copy>
</permission>
```

Example test constraint 2

```xml
<permission>
  <display>
    <constraint>
      <customary test="(user/status=='initiated') && (user/gender='male')"/>
    </constraint>
  </display>
</permission>
```
Example test constraint 3

```xml
<permission>
  <display/>
  <constraint>
    <customary test="“(context/subject/person/deathDate != null) && (currentDate < (context/subject/person/deathDate + 5))”"/>
  </constraint>
</permission>
```

Warning Constraint

```xml
<permission>
  <display/>
  <constraint>
    <customary warning="Indigenous viewers should be aware that the following program may contain culturally sensitive material - including images of people who have since died."/>
  </constraint>
</display>
</permission>
```

Request Constraint

```xml
<permission>
  <copy/>
  <constraint>
    <customary request="Not to be reproduced in a context which is demeaning, offensive, or insulting to the traditional owners."/>
  </constraint>
</copy>
</permission>
```

Application of constraints

- Collection
  - Group
    - Individual object
  - Group of Users
    - Individual User

Example: Dreamtime painting
Indigenous Rights Management Project

- National Museum of American Indian Cultural Resources Centre
- Interoperable Metadata Model for Multimedia in Museums
  - description, management, rights
- Indexing, Annotation, Search and Retrieval tools
- Video recording of rights agreements
Local Applications

- N.F.Nelson Report;
- Oodgeroo Nunukal Archives – Sacred Treaty Circles.

N.F.Nelson Report
Record of Visit to Mission Stations 1936

Oodgeroo Nunukal Archives

References

- http://mpeg.telecomitalialab.com/
- http://metadata.net/harmony/

Acknowledgements

- Bevan Koopman, UQ ITEE
- Smithsonian NMAI – Jane Sledge
- Ara Irititja Archival project – John Dallwitz
- “Our Words Put to Paper” - Igor Krupnik